

94. a plurality of individual ceramic tile elements as exemplified by elements 17 and 18, the adhesive layer 13, and the aramid fiber composite substrate 14. The ceramic tile facing elements 17 and 18 can be square ceramic tiles or otherwise shaped to suit the dimensional needs of a particular application.

IN THE CLAIMS

Cancel claims 1 to 16.

Add the following new claims 17 to 40.

17. Ceramic armor apparatus comprising in combination:
a ceramic facing element with thickness of 0.080-inches to 0.310 inches;
an adhesive layer with thickness ranging from 0.002-inches to 0.090-inches; and
an aramid fiber composite substrate with thickness of 0.130-inches to 0.350-inches; the aramid fiber composite substrate comprising aramid fiber fabric in a plain, basket, or twill weave style with a basis weight between 3.5- and 20.0-ounces-per-square-yard.

95. 18. The ceramic armor apparatus according to claim 17, wherein:
the aramid fiber fabric comprises aramid fibers with fineness ranging from 250- to 3,500-denier.

Ins B2 3. 19. The ceramic armor apparatus according to claim 17, wherein:
the ceramic armor apparatus provides protection against ~~a 5.56mm M193 bullet,~~
~~a 5.56mm M855 bullet, a 5.56mm SS109 bullet, a 7.62mm M80 bullet, a 7.62mm LPS~~
~~bullet, and a 7.62mm PS bullet either alone or in any combination thereof.~~

4. 20. The ceramic armor apparatus according to claim 17, wherein:
the ceramic facing element is comprised of Boron Carbide ceramic, Silicon Carbide ceramic or a ceramic matrix composite containing Boron Carbide ceramic and/or Silicon Carbide ceramic particles.

5. 21. The ceramic armor apparatus according to claim 17 wherein:

the ceramic facing element is a continuous monolithic plate that is generally flat, or with single, double, or compound curvature.

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~~22.~~ The ceramic armor apparatus according to claim ¹~~17~~, wherein:
the adhesive layer is comprised of an epoxy adhesive, a polysulfide adhesive, a polyurethane adhesive, or a polyolefin adhesive.

⁷
~~23.~~ The ceramic armor apparatus according to claim ¹~~17~~, wherein:
the ceramic facing element, the adhesive layer, and the aramid fiber composite substrate have a combined thickness that falls in the range between 0.430-inches and 0.530-inches inclusively.

⁸
~~24.~~ The ceramic armor apparatus according to claim ¹~~17~~, wherein:
the ceramic facing element, the adhesive layer, and the aramid fiber composite substrate have a combined weight that falls in the range between 4.00- and 5.70-pounds-per-square-foot inclusively.

⁹
~~25.~~ Ceramic armor apparatus comprising in combination:
a ceramic facing element with thickness of 0.080-inches to 0.310 inches;
an adhesive layer with thickness ranging from 0.002-inches to 0.090-inches; and
an aramid fiber composite substrate with thickness of 0.130-inches to 0.350-inches; the aramid fiber composite substrate comprising aramid unidirectional tapes with all tapes arranged in 0, 15, 30, 45, 60, 90-degree orientation or combinations thereof.

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~~26.~~ The ceramic armor apparatus according to claim ⁹~~25~~, wherein:
the aramid fiber tapes comprise aramid fibers with fineness ranging from 250- to 3,500-denier.

¹¹
~~27.~~ The ceramic armor apparatus according to claim ⁹~~25~~, wherein:
the ceramic armor apparatus provides protection against a ~~5.56mm M193 bullet,~~
~~a 5.56mm M855 bullet, a 5.56mm SS109 bullet, a 7.62mm M80 bullet, a 7.62mm LPS~~
~~bullet, and a 7.62mm PS bullet either alone or in any combination thereof.~~

¹²
~~28.~~ The ceramic armor apparatus according to claim ⁹~~25~~, wherein:

the ceramic facing element is comprised of Boron Carbide ceramic, Silicon Carbide ceramic or a ceramic matrix composite containing Boron Carbide ceramic and/or Silicon Carbide ceramic particles.

13
28. The ceramic armor apparatus according to claim 25, wherein:
the ceramic facing element is a continuous monolithic plate that is generally flat, or with single, double, or compound curvature.

14
30. The ceramic armor apparatus according to claim 25, wherein:
the adhesive layer is comprised of an epoxy adhesive, a polysulfide adhesive, a polyurethane adhesive, or a polyolefin adhesive.

15
31. The ceramic armor apparatus according to claim 25, wherein:
the ceramic facing element, the adhesive layer, and the aramid fiber composite substrate have a combined thickness that falls in the range between 0.430-inches and 0.530-inches inclusively.

16
32. The ceramic armor apparatus according to claim 25, wherein:
the ceramic facing element, the adhesive layer, and the aramid fiber composite substrate have a combined weight that falls in the range between 4.00- and 5.70-pounds-per-square-foot inclusively.

17
33. Ceramic armor apparatus comprising in combination:
a ceramic facing element with thickness of 0.080-inches to 0.310 inches;
an adhesive layer with thickness ranging from 0.002-inches to 0.090-inches; and
an aramid fiber composite substrate with thickness of 0.130-inches to 0.350-inches; the aramid fiber composite substrate comprising a three-dimensional aramid fiber fabric structure that incorporates stitching or fiber axes along or about a z-axis of the fabric structure.

18
34. The ceramic armor apparatus according to claim 33, wherein:
the three-dimensional aramid fiber fabric structure comprises aramid fibers with fineness ranging from 250- to 3,500-denier.

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35.

The ceramic armor apparatus according to claim 33, wherein:

Ins. B4
the ceramic armor apparatus provides protection against a ~~5.56mm M193 bullet,~~
~~a 5.56mm M855 bullet, a 5.56mm SS109 bullet, a 7.62mm M80 bullet, a 7.62mm LPS~~
~~bullet, and a 7.62mm PS bullet either alone or in any combination thereof.~~


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36.

The ceramic armor apparatus according to claim 33, wherein:

the ceramic facing element is comprised of Boron Carbide ceramic, Silicon Carbide ceramic or a ceramic matrix composite containing Boron Carbide ceramic and/or Silicon Carbide ceramic particles.

21
37.

The ceramic armor apparatus according to claim 33 wherein:

the ceramic facing element is a continuous monolithic plate that is generally flat, or with single, double, or compound curvature.

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The ceramic armor apparatus according to claim 33, wherein:

the adhesive layer is comprised of an epoxy adhesive, a polysulfide adhesive, a polyurethane adhesive, or a polyolefin adhesive.

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39.

The ceramic armor apparatus according to claim 33, wherein:

the ceramic facing element, the adhesive layer, and the aramid fiber composite substrate have a combined thickness that falls in the range between 0.430-inches and 0.530-inches inclusively.

24
40.

The ceramic armor apparatus according to claim 33, wherein:

the ceramic facing element, the adhesive layer, and the aramid fiber composite substrate have a combined weight that falls in the range between 4.00- and 5.70-pounds-per-square-foot inclusively.